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January 12, 2012

To: Task Force on Public Access to Scholarly Publications
National Science and Technology Council (NSTC)
Office of Science and Technology Policy (OSTP)

***Response to Request for Information:
Public Access to Peer-Reviewed Scholarly Publications
Resulting From Federally Funded Research***

Federal Register Volume 76, Number 214 (Friday, November 4, 2011). Notices. Pages 68518-68520. From the Federal Register Online via the Government Printing Office [www.gpo.gov] [FR Doc No: 2011-28623]

INTRODUCTION

The subject “Request for Information (RFI)” offered the opportunity for interested individuals and organizations to provide recommendations on approaches for ensuring long-term stewardship and broad public access to the peer-reviewed scholarly publications that result from federally funded scientific research. What follows are the recommendations of the Editor-in-Chief of the Acoustical Society of America (ASA). These resulted from extended discussions with various members of the Society. However, because of the desire to meet the extended submission deadline of January 12, it was not possible to have a formal vote by the Society in regard to these recommendations, so these recommendations should be properly regarded as recommendations by an individual rather than for an organization. However, it is the sense of the present author, who has been a member of the Society for 50 years, that the opinions expressed here are shared by the majority of the Society’s members.

The Acoustical Society of America is a not-for-profit scholarly organization (a professional organization) of individuals interested in acoustics, and its stated mission is “to increase and diffuse the knowledge of acoustics and to promote its practical applications.” The Society was founded in 1929 and it presently has about 7000 members. Its premier journal, *The Journal of the Acoustical Society of America* was started the same year. The *Journal* presently publishes about 900 peer-reviewed research articles per year. The number of pages published per year is of the order of 9000.

The entire journal dating back to the first volume is now available online. A substantial portion of its articles, especially the section *JASA Express Letters*, can be downloaded at no cost by anyone in the world. Accessibility to the rest of the articles is not regarded by the Society as a substantial problem because the bulk of the potential readers are either members or the Society or else affiliated with an institution that subscribes to the *Journal*. The membership dues are modest and all members have online access to the entire journal, going back to 1929. The dues for students and persons living in developing countries are only \$45. For other individuals, dues are set at \$95 per year for the first five years, and thereafter at \$115. The majority of the institutional subscribers receive the print edition as well as unlimited online access by all the persons affiliated with the institution. The cost of institutional subscription amounts to about 24 cents per printed (two-column) page, which is comparable to what is the cost per page of typical specialized monographs on comparable topics.

For further information about the Acoustical Society of America, one should visit the web site

<http://acousticalsociety.org/>

A substantial minority of the Society's members conduct research with some support from the United States government, and the Society depends critically on whether those members choose to publish papers reporting their research in the Society's publications. If a substantial minority of the members were forced to publish their papers elsewhere it would substantially reduce the journal's reputation for being the one place to go to read the current best work in acoustics and it would substantially reduce the value of membership in the Acoustical Society of America.

RESPONSE TO QUESTION 1

Are there steps that agencies could take to grow existing and new markets related to the access and analysis of peer-reviewed publications that result from federally funded scientific research? How can policies for archiving publications and making them publically accessible be used to grow the economy and improve the productivity of the scientific enterprise? What are the relative costs and benefits of such policies? What type of access to these publications is required to maximize U.S. economic growth and improve the productivity of the American scientific enterprise?

One suggestion is that various agencies should publish periodic documents that summarize the recent results of federally funded research and which cite primary sources where the readers can find more information. An example that comes to mind is *NASA Tech Briefs*. Subscriptions are free, but are apparently available only to persons in companies that are potential buyers of services and items advertised in the magazine. Consequently, there is some question as to whether it is truly publicly accessible. However, the present writer has a strong impression that *NASA Tech Briefs* has contributed to the growth of the economy. Many of the ideas and technologies developed during the U. S. space program, for example, have had sizable impact on other areas of our society.

The questions as posed do not make a distinction among the various possibilities that might be associated with the terms and phrases: "access," "analysis," and "peer-reviewed publications." There is a tremendous number of publications in the sciences, and most of the major libraries can only afford to subscribe to a fraction of them. Most of the published articles have only been cursorily analyzed by the scientific community and find few actual readers. While many journals claim that the articles within them have been peer-reviewed, there are real questions as to what this means for various journals. One suggestion is that the various agencies should support the submission of articles based on federally supported research to journals associated with major professional societies. Such journals are more likely to be found in libraries and they will also be available to the members of the societies, so their degree of access will be much higher. Also, the quality of peer-review will be much higher. If a scientist or researcher is asked to review a paper submitted to a for-profit journal of recent vintage, the person will be much more likely to decline doing the review, as distinct from a request from a leading professional society for which the scientist happens to be a member. There

are of course long-established reputable journals that are published by commercial publishers, and many scientists are willing to review (without compensation) for these journals because of their long-standing reputation for quality and because of the perception that they are providing a substantial service to the scientific community. The concern that many scientists have is that the newly created thrust by some individuals within the federal government toward some comprehensive concept of open access will encourage the proliferation of for-profit journals which are of a “vanity press” nature and that this will be of considerable detriment to the orderly archiving and evaluation of scientific research.

It is suspected that the federal government may not want to spend a disproportionate additional amount of money on making the results of federally sponsored research fully publicly accessible. For the most part, the present system, at least as far as publications under the purview of professional societies are concerned, is working fairly well. The professional societies collect dues from their members and these are used to support giving as much access to as many people as practicable for their publications. The dues cannot pay for everything, so some extra monies are collected from the authors and from the institutions which subscribe to their journals. The revenues are sufficient so that the journals can also publish articles written by authors who do not have available funds to help with publication costs. Such authors constitute the majority of the authors who submit papers to the *Journal of the Acoustical Society of America*. Also, the present writer believes that the subscriptions to professional society journals are only a small part of the expenditures made by most institutional libraries. The major portion of the money goes to subscriptions to journals published by commercial organizations not associated with any professional society. Most societies of which the present writer and his colleagues are aware are continually looking for innovative ideas to make their publications more accessible. For example, the American Physical Society has started a new journal *Physical Review X* (author publication fee is \$1500) which is totally open-access. This model, however, cannot work for all authors, only for the minority who have sufficient support to pay the required fees. The Acoustical Society has a journal, *Proceedings of Papers on Acoustics*, which also is totally open-access and which collects no fees from authors.

A major problem is the recent emergence of new open-access journals publications by (start-up?) commercial organizations. There are a very large number of such journals and they are not associated with professional societies. Typically, their editorial boards are either kept secret or composed of persons who have relatively low status within their respective research communities. Members of the Acoustical Society of America are regularly and frequently bombarded by e-mails asking them to apply to be an Editor-in-Chief of a newly started journal, or to serve on the Editorial Board, to submit a paper, or to submit a review paper. This emergence has undoubtedly been partly encouraged by persons in various federal agencies and by staff-members of some institutional libraries who have a high opinion of the sanctity of open-access publication. There is no guarantee that these journals will exist for a reasonable amount of time. What happens if the sponsoring commercial organization should throw in the towel and stop paying for the web-site on which the articles have been posted? What guarantee do the authors have, after paying such fees, that their articles will be noticed by the people they may want to read them? They may be open-access, but that does little good if no one notices them.

The questions in this category apparently ignored the fact that much research is not funded by the federal government. Many persons conduct research simply because it is their way of life (a “way to spend their days”), and they will continue to do it with or without any external support. In some cases, they are mildly encouraged by their employers to publish research articles, but support for such publication is not feasible within the employer’s budget. A cursory examination of recent issues of the *Journal of the Acoustical Society of America* indicates that only about 20% of the research articles acknowledge some support from the U. S. government. In many cases, the acknowledgements imply that the research was only supported in part, not in its entirety, by the federal government. There

are no discernible differences in quality in the articles where support is acknowledged with those where it is not acknowledged. Consequently, it would seem awkward that the Acoustical Society should make a distinction between supported and non-supported research, especially given its mission statement “to increase and diffuse the knowledge of acoustics and to promote its practical applications.” However, the present write has a good

Possibly, one of the questions in this category might be rephrased to one such as “Are there steps that agencies could take to grow existing and new markets related to the access and analysis of peer-reviewed publications?” without regard to just what fraction of the material in the publications results from federal funding. Ideally, all research should be as publicly accessible as practicable, and available for growing the economy and maximizing U. S. economic growth.

One suggestion is that the government subsidize the publication of abstract journals which include abstracts written by scientists with high reputation who give frank assessments of recently published research.

To a certain extent, in the present system of publication of scientific work, the authors themselves control the availability of the publications. If one submits a paper to a journal with a wide circulation, one that is widely read and noticed, then accessibility is certainly guaranteed. If one submits a paper to a lesser known journal, one for which the bulk of the scientific community has little respect, the paper will be de facto inaccessible. It doesn't matter that a knowledgeable person can navigate to some website and download the paper at no cost. The effort involved in conjunction with the low expectation for getting something worth reading will deter most relevant people from doing this.

This leads to the suggestion that the responsible scientists who guide the funding of federally-supported research take tangible steps to encourage the publication of the resulting articles in venues where they are more likely to have the greater impact. It is of secondary importance whether the article can be obtained immediately for free or purchased for a very modest fee. Just what is a modest fee may be debatable, but one would certainly expect that a fee of, say, 20 cents per printed page would be reasonable. However, one major difficulty is that the reader may not know what he or she is getting for the investment. If one should do an internet search and come up with a list of, say, 100 potentially useful articles, each of, say, 10 pages, then the cost of downloading all of them would be prohibitive for most persons. Consequently, there might need to be some oversight, some preview options, some external review comments, so that the buyers would have a good idea of what they are paying for.

RESPONSE TO QUESTION 2

What specific steps can be taken to protect the intellectual property interests of publishers, scientists, Federal agencies, and other stakeholders involved with the publication and dissemination of peer-reviewed scholarly publications resulting from federally funded scientific research? Conversely, are there policies that should not be adopted with respect to public access to peer-reviewed scholarly publications so as not to undermine any intellectual property rights of publishers, scientists, Federal agencies, and other stakeholders?

If the research is genuinely and totally funded by the Federal government, then a reasonable view is that the ideas and results should be in the public domain. If a third party organization, such as a professional society, invests money and volunteer time on the part of its members in the assessment, rewriting, revising, editing, vetting, and publication of a scholarly work resulting from federal funding, then the value of its contribution should be recognized. It does not seem proper that any organization should make huge profits off of such activities, but the system should be organized so that the value of such efforts are recognized and are economically viable. If the government should

choose to encourage the researchers it funds to publish their work in a rough format with no added value from the scholarly publishing community, they would be doing a great disservice to the cause of the orderly dissemination of scientific work.

In regard to policies that should not be adopted, one is that of allowing third parties without permission to republish work that has been published with added value by publishers. This stipulation should be made providing the originally published work is truly accessible. If the work is inaccessible, then some allowances might be made. If a third party wants to publish the original work without any additional valued-added content and if the work was fully supported by the government, then this might be allowed, given the permission of the government.

RESPONSE TO QUESTION 3

What are the pros and cons of centralized and decentralized approaches to managing public access to peer-reviewed scholarly publications that result from federally funded research in terms of interoperability, search, development of analytic tools, and other scientific and commercial opportunities? Are there reasons why a Federal agency (or agencies) should maintain custody of all published content, and are there ways that the government can ensure long-term stewardship if content is distributed across multiple private sources?

There are very good reasons for the government to have a strong management system to insure the public access to all research that has been published in U. S. government reports. (This is, of course, subject to the usual caveats about national security and other sensitive topics.) This is distinct from research carried out at non-governmental institutions and which has been published in peer-reviewed non-governmental publications. The perception on the part of many researchers outside the government is that the government has not done nearly as much as it should have in this respect. Discovering the existence of such governmental reports is typically not easy, the metadata is often not especially informative, and the prospective reader is asked to pay a relatively healthy fee to download a poor pdf copy of a scan of the original published report. This is possibly an area that should be given the highest priority.

A concern with the possibility of the government managing only publications that result from federally funded research is that it would discriminate against work that is not federally funded. Most of the latter is not proprietary and the authors want their work to be read and used. As mentioned above, much scientific work is not federally-funded, and the work that is federally-funded is not necessarily superior to that which is not. It would seem the height of arrogance for any federal agency to presume that the only research in its purview that is worth touting is that which it supports. If there are some areas of research (such as some which concern health and public policy) which the government deems meritorious of extraordinary accessibility to the general public, not just the research community, then the government should make efforts to see that all research articles exceeding some threshold of quality should be accessible, not just those resulting from Federal support.

A good model of what can and should be done is the arXiv.org website housed by the Cornell University Library and which is supported by a large number of institutions. It was certainly initially supported, at Los Alamos, by the federal government, but the current extent of its federal support is not known. As it presently is configured, it allows free uploading of preprint articles in the physical sciences, without regard to the sources of support of the research.

However, the recent proliferation of literature requires that some steps be made to organize the literature, also to assess its relative values, and to bring it to the attention of people who might make use of it. The government has done laudatory things in this respect in the past, and it may want to fund or partially support activities along these lines. These present commercial search engines, such

as Google Scholar, are inadequate for the task, so some publicly funded assistance or direct federal involvement could be very valuable.

Maintaining long-term stewardship can be very difficult if the the number of private sources is too high. One suggestion is that the government institute a certification program for such private sources. This would not mean that individuals should be forced to publish with sources that are certified, but some mild encouragement might be applied to persons who receive grants or contracts from federal agencies. This is something entirely different than the perceived thrust where agencies force people to publish only in totally open-access journals, such as the recently created vanity-press journals, at the detriment of traditional publishers which need to ask for subscription fees from institutions.

RESPONSE TO QUESTION 4

Are there models or new ideas for public-private partnerships that take advantage of existing publisher archives and encourage innovation in accessibility and interoperability, while ensuring long-term stewardship of the results of federally funded research?

For answers to this question, one probably should look to other countries and to earlier times. The proper role models are the professional societies, which are the chief advocates and overseers of standards in the publication of research results. Typically, such societies strongly encourage innovation in accessibility and interoperability. In some countries, and especially so in former times, professional societies were largely supported by the governments of the countries in which the membership resided. This does not seem to be the case for professional societies in the United States in the present age. For example, the Acoustical Society of America has no tangible ties with the United States government, and it also has many members who live outside of the United States. There are a few instances where various government agencies, such as NASA, the Office of Naval Research, and the Department of Transportation, have partially supported specific tasks of the Society, but the occasions have been rare and the extent of support compared to the overall operational budget has been small, although nevertheless highly appreciated.

There is considerable concern as to the reliability of the government in regard to long-term stewardship. This is a key issue. Governmental priorities change frequently, and the only substantial commitment is that which is actually in the U. S. constitution. Long-established professional societies and long-established major research universities provide a better hope for long-term stewardship. If the government helps to support such, it would be greatly appreciated, but the stewardship will continue on in any event.

RESPONSE TO QUESTION 5

What steps can be taken by Federal agencies, publishers, and/or scholarly and professional societies to encourage interoperable search, discovery, and analysis capacity across disciplines and archives? What are the minimum core metadata for scholarly publications that must be made available to the public to allow such capabilities? How should Federal agencies make certain that such minimum core metadata associated with peer-reviewed publications resulting from federally funded scientific research are publicly available to ensure that these publications can be easily found and linked to Federal science funding?

A major block to research across disciplines and archives is the use of jargon and acronyms, and also the lack of clear writing. The *Journal of the Acoustical Society of America* wages a constant battle with authors who insist on using acronyms which would be completely unfamiliar to persons outside a narrow subfield. Doing this apparently gives the authors a sense of superiority and also helps to keep outsiders from treading on their turf. So, a major step is for Federal agencies,

publishers, and professional societies is to encourage clear writing that is as widely readable as practicable. This means, in particular, that the peer-review process should be broadened to insure this.

The idea of a centralized system of metadata may be inoperable, given the great diversity among the various scientific disciplines. There are differences in the citation formats and metadata from the existing archival publishers. In many cases, the formats are driven by the demands of the subject matter and it would be a mistake to impose a common format on all publishers.

While some might argue that core metadata consists solely of distinct experimental results, it also consists of techniques, procedures, mathematical relations, and, most importantly, ideas. It may be necessary to have third parties actually read each paper and then rewrite them so as to succinctly bring out the core metadata in a form that would be more readily palatable to a wider readership. This would be more than just copying the author prepared abstract, and the synopses could be much longer. One of the frustrations that are encountered by journal editors is that few people are willing to step forward and comment on previous published work. Many journals, especially those not associated with professional societies, do not even allow for this possibility. The *Journal of the Acoustical Society of America* allows for submission of “comments papers,” but there are very few submissions in this category. Perhaps one reason is that such authors get neither funding support or recognition. If various interested parties did something proactive, then something positive might come about.

From one aspect, the *NASA Tech Briefs* might be a good role model for how federal agencies might approach this problem. Another role model might be *Mathematical Reviews*, which is published by the American Mathematical Society.

RESPONSE TO QUESTION 6

How can Federal agencies that fund science maximize the benefit of public access policies to U.S. taxpayers, and their investment in the peer-reviewed literature, while minimizing burden and costs for stakeholders, including awardee institutions, scientists, publishers, Federal agencies, and libraries?

One solution is to initiate steps so that those U. S. taxpayers who do not have any direct involvement with major institutions can nevertheless have access to their library resources. Most institutions extend this privilege, possibly for a fee, to their alumni. But, nevertheless, almost all such institutions are major beneficiaries of federal funding. So leverage and possible financial encouragement should be given to them so that they will allow library access, possibly with some constraints against abuse and for a modest fee (to discourage frivolous use of services), to any person who desires it. For the most part, this would mean only online access to the journals to which the institution subscribes.

While timely access to the latest research and to all previous research is essential to the health of the scientific community, it is not at all clear that free and open access to all is uniformly beneficial to the U.S. taxpayers. The cost to the federal government can be contained if it exercises some judgement as to just what should be freely and fully available to the general public. Awardee institutions, scientists, publishers, federal agencies, and libraries operate under very different incentives, and care should be taken that federal policies do not destroy the incentives for any of the essential links that comprise the publication chain.

RESPONSE TO QUESTION 7

Besides scholarly journal articles, should other types of peer-reviewed publications resulting from federally funded research, such as book chapters and conference proceedings, be covered by these public access policies?

If the publication is genuinely a book, then it will be primarily of a review and tutorial nature, not the sort of a publication the ordinary results from federal funding. These are typically funded by commercial publishers (such as McGraw-Hill, Wiley, Springer, Elsevier, and many others), and they have to take risks to stay in business. The profits are not enormous, and there seems to be no reasonable way to guarantee the public open access to books. The present system, which seems to work all right, is the interlibrary loan system, whereby every book is in at least one major library, and patrons at other libraries can obtain the book via interlibrary loan.

Conference proceedings are usually not peer-reviewed, at least not in a rigorous sense, and they are viewed by most scientists as being of temporary value. Recently, they seem to all be published as CD-ROMS and their distribution is very small. Most libraries refuse to shelve CD-ROMS, so they are de facto not archival. Perhaps, there could be some system, analogous to arXiv.com mentioned above, whereby authors could post their presentation slides (in ppt or pdf format) on some centralized site. This could prove to be rather expensive, however. The Acoustical Society of America has a reasonable system in its online journal, *Proceedings of Meetings on Acoustics*, where conference proceedings are posted online, fully accessible, at no cost to the authors.

RESPONSE TO QUESTION 8

What is the appropriate embargo period after publication before the public is granted free access to the full content of peer-reviewed scholarly publications resulting from federally funded research? Please describe the empirical basis for the recommended embargo period. Analyses that weigh public and private benefits and account for external market factors, such as competition, price changes, library budgets, and other factors, will be particularly useful. Are there evidence-based arguments that can be made that the delay period should be different for specific disciplines or types of publications?

The Acoustical Society of America has no objections if pdf's of the articles in its journal are posted on governmental web sites (such as PubMed) or on institutional web sites. There is no specified embargo period, although the official release is usually after six months. All of its articles are copyrighted, and the concern is that third parties may want to collect such articles, republish them, and attempt to sell them for a profit. For various reasons, it is expected that persons will choose to search on the *Journal* first to find them, as the scope of articles on sites such as those mentioned is too broad for a reasonably organized search. There is no indication that this policy has adversely affected the institutional subscriptions to the *Journal of the Acoustical Society of America* or the number of persons who choose to be members of the Society.

OTHER ITEMS

Please identify any other items the Task Force might consider for Federal policies related to public access to peer-reviewed scholarly publications resulting from federally supported research.

The government should be aware that the present system of peer-review, at least for the journals associated with professional societies, derives a considerable benefit from voluntary efforts. It is not clear how the government could insure comparable quality and degree of intelligently-directed access if it did not have the results of such voluntary efforts. The role of the government in funding research is important, but it is far from being the overwhelmingly most important contributor to insuring the actual use of the research. What are perceived as possible governmental actions may run large

risks of cutting off such voluntary efforts. There is of course the valid concern that the public should have access to results of federal-funded research, but the existing enterprise is in effect a partnership in which the end-products, the published peer-reviewed article and its distribution, are contributed to by organizations and persons who are not directly compensated by the government.

The respondent sees no evidence in the various questions that are being asked that the government has any understanding of the threat that is being made to the scientific enterprise by the rise of a vanity press that offers open access publication. The peer review by journals of this sort will probably be meaningless, and there are various accounts (not reproduced here) of instances where authors, to test the system, have submitted purely nonsense papers which have been accepted, providing the authors pay the requisite fees.

The government should also be aware that not everything published in some peer-reviewed journals is in the nature of original research, but is material that nevertheless can benefit the economy. For example, the *Journal of the Acoustical Society of America* continues to publish voluntarily-written reviews of every patent that pertains to acoustics. It also publishes tutorial papers that help the readers to become more fully cognizant with the research results and with the fundamentals of the subject. Then, there are many articles that are intended to improve the teaching of the subject. There are articles which describe the progress in achieving standards for many types of activities which involve acoustics. These do not seem to be things which federal agencies would customarily fund. The present writer thinks that it is important that the primary venue for the publication of scientific work should also contain articles that are intended to help professionals in their work.

One concern mentioned by a reviewer of a draft of this letter is that the thrust towards open access seems to ignore the fact that much federally-funded research is kept from public access because of overly cautious fears that it might benefit potential enemies of the country. Singled out as an example were the overzealous interpretation of the ITAR (International Traffic in Arms Regulations). There are worries that authors receiving federal funding may be choosing not to disseminate information that should be in the public domain due to fear of remote possibilities of the applicability of ITAR and export control regulations. Perhaps a better effort by the government to distinguish among research as to whether it deserves being in the public domain is worth pursuing.

A concern mentioned by another reviewer is that the government does not provide open access to unclassified final reports resulting from sponsored research by some federal agencies. The existence of these reports can be found with some effort, but the obtaining of them usually requires a relatively high fee. One wonders, if the research was supported by the U. S. Taxpayers and if it might have some potential benefits to growing the economy, why it isn't available at substantially lower cost.

Sincerely yours,



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